Appendix E

Fish and Wildlife Tables

Table E-1: Fish Presence/Absence and Fisheries Habitat at Waterway Crossings

Table E-2: Common and Scientific Names of Amphibian, Birds, Fish, and Mammals Mentioned in Section 3.5, Fish and Wildlife

Table E-1: Fish Presence/Absence and Fisheries Habitat at Waterway Crossings

Waterway Name[1]	Stream Crossing Numbers[2]	Stream[3] Channel Width (ft)	Stream Type[4]	Salmonid Habitat[5]	Anad. Fish Access[6]	Fish Presence Survey[7]	Fish Presence Documented in Literature and by Fisheries Biologists[8]
S2GF/BELLINGHAM OVERHEAD TRANSMISSION LINE WATERWAY CROSSINGS							
Squalicum Creek Basin							
Squalicum Cr.	A-S1	15	P-E	S/R	X	CT	**CO**, CH, **WST**, **SCT**
Unnamed Cr.	A-S2	20	P-E	R	X	NO	**CO**, **WST**, **SCT**
Unnamed Cr.	A-S3	18	P-E	S/R	X	S	**CO**, **SCT**
Unnamed Cr.	A-S4	10	E-E	R	X	NO	**CO**, **WST**, **SCT**
Unnamed Cr.	A-S5	1	D	NONE	NF	NF	CO, WST, SCT
Unnamed Cr.	A-S6	8	D	NONE	NF	NF	CO, WST, SCT
Unnamed Cr.	A-S7	2	D	NONE	NF	NF	CO, WST, SCT
Nooksack River Basin							
Tenmile Cr.	A-S8	18	P-E	R	X	S	**CO**, CH
Unnamed Cr.	A-S9	1	D-E	NONE	NF	NF	CO
Ditch	AS10	2	Ditch	R	X	NO	None Documented
Ditch	A-S11	1	Ditch	R	X	NO	None Documented
Ditch	A-S12	3	Ditch	R	R	NO	None Documented
Ditch	A-S13	2	Ditch	R	X	NO	None Documented
Ditch	A-S14	2	Ditch	R	X	NO	None Documented
Nooksack R.	A-S15	390*	P	S/R	X	S	**FC**, **SPC**, **CH**, **CO**, **PS**, **SS**, **WST**, **SST**, **SCT**, **NC, EC, NS, LS, TS, MW, COT, LD, SD, BL, RL, PL**
Nooksack R.	A-S16	862*	P	S/R	X	S	**FC**, **SPC**, **CH**, **CO**, **PS**, **SS**, **WST**, **SST**, **SCT**, **NC, EC, NS, LS, TS, MW, COT, LD, SD, BL, RL, PL**
Ditch	A-S17	2	Ditch	NONE	NF	NF	None Documented
Ditch	A-S18	1	Ditch	NONE	NF	NF	None Documented
Sumas River Basin							
Johnson Cr.	A-S19	3	P-E	R	X	NO	**CO**, **CH**, **WST**
Johnson Cr.	A-S20	3	P-E	R	X	NO	**CO**, **CH**, **WST**
Johnson Cr.	A-S21	6	P-E	R	X	NO	**CO**, **CH**, **WST**
Unnamed Cr.	A-S22	3	P-E	R	X	NO	**CO**

Waterway Name[1]	Stream Crossing Numbers[2]	Stream[3] Channel Width (ft)	Stream Type[4]	Salmonid Habitat[5]	Anad. Fish Access[6]	Fish Presence Survey[7]	Fish Presence Documented in Literature and by Fisheries Biologists[8]
Johnson Cr.	A-S23	6	P-E	R	X	NO	**CO**, **CH**, **WST**
Squaw Cr.	A-S24	3	P-E	R	X	NO	**CO**, **WST**
Unnamed Cr.	A-S25	1	D	NONE	NF	NF	None Documented
N.F. Johnson Cr.	A-S26	12	P	S/R	X	CT, CO, COT	**CO**, **CH**, **WST**
Johnson Cr.	A-S27	10	P-E	R	X	S	**CO**, CH, **WST**
Unnamed Cr.	A-S28	1	E-E	NONE	NF	NF	None Documented
Bone Cr.	A-S29	4	P-E	R	X	NO	CO
Bone Cr.	A-S30	4	P-E	R	X	NO	CO
Johnson Cr.	A-S31	16	P-E	R	X	CT, CO	**CO**, CH, WST
S2GF/CUSTER OVERHEAD TRANSMISSION LINE WATERWAY CROSSINGS							
California Creek Basin							
Ditch	B-S1	1	Ditch	R	X	NO	None Documented
Ditch	B-S2	1	Ditch	R	X	NO	None Documented
Ditch	B-S3	1	Ditch	NONE	NF	NF	None Documented
Ditch	B-S4	1	Ditch	NONE	NF	NF	None Documented
Dakota Creek Basin							
Unnamed Cr.	B-S5	2	Ditch	NONE	NF	NF	CO, SCT
S.F. Dakota Cr.	B-S6	60	P-E	R	X	NO	**CO**, CH, **SCT**, WST
Unnamed Cr.	B-S7	1	E	R	R	NO	None Documented
S.F. Dakota Cr.	B-S8	2	E-E	R	X	NO	CO, CH, SCT, WST
Nooksack River Basin							
Bertrand Cr.	B-S9	95	P	S/R	X	S	**CO**, CH, PS, **RT**, **CT**, NC
Double Ditch/Pepin Cr.	B-S10	8	P-E	S/R	X	NO	**CO**, **WST, CT**
Ditch	B-S11	6	Ditch	R	X	NO	None Documented
Fishtrap Cr.	B-S12	14	P-E	S/R	X	S	**CO**, WST, CH, **CT**, NC
Sumas River Basin							
Ditch	B-S13	1	Ditch	NONE	NF	NF	None Documented

Waterway Name[1]	Stream Crossing Numbers[2]	Stream[3] Channel Width (ft)	Stream Type[4]	Salmonid Habitat[5]	Anad. Fish Access[6]	Fish Presence Survey[7]	Fish Presence Documented in Literature and by Fisheries Biologists[8]
Ditch	B-S14	5	Ditch	NONE	NF	NF	None Documented
S2GF TO CANADIAN BORDER 230 kV OVERHEAD TRANSMISSION LINE WATERWAY CROSSINGS							
Sumas River Basin							
Sumas Cr.	C-S1	6	P	S/R	X	CT	**CT**, **CO**
S2GF TO CANADIAN BORDER SEWER LINE WATERWAY CROSSINGS							
Sumas River Basin							
Sumas Creek	S-S1	6	P-E	S/R	X	CT, COT	**CT**, **CO**
S2GF TO CANADIAN BORDER NATURAL GAS LINE WATERWAY CROSSINGS							
Sumas River Basin							
Johnson Creek	G-S1	16	P-E	R	X	CT, CO	**CO**, **CH**, **WST**
Bone Creek	G-S2	4	P-E	R	X	NO	CO
Sumas R.	G-S3	20	P-E	R	X	NO	**CO**, **CH**, **WST**

[1] Ditch number 0217 and the Nooksack River are crossed by a Preferred Route at crossings S-14 and S-16 and an Alternative Route at crossings S-13 and S-15.

[2] Dames & Moore stream crossing number. Crossings A-S31 and G-S1 are at the same location on Johnson Creek.

[3] Stream channel widths represent the distance in feet between the high water marks on each bank. The Nooksack River crossings are marked with an asterisk (*) because they contain large gravel bars during low water and crossing A-S16 has two channels with an island in between. At low water, crossing A-S15 has a gravel bar approximately 241 feet in width on the west bank, which combined with a submerged channel of 149 feet in width yields a total channel width of 390 feet. Crossing A-S16, at low water, has a small channel of 37 feet in width and a large channel of 825 feet in width (including 532 feet of gravel bar exposed during low water).

[4] Stream Type – The following are not official state or federal designations; they are meant to serve as indicators for the seasonal nature of stream flows and to designate whether a stream channel is natural or excavated:

Ditch – An artificial drainage or irrigation ditch
P – A perennial stream with a natural channel
P-E – A perennial stream with an excavated channel
E – An ephemeral or intermittent stream with a natural channel that supports seasonal flows of water that could support fish during a portion of their life cycle.
E-E – An ephemeral or intermittent stream with an excavated channel that supports seasonal flows of water that could support fish during a portion of their life cycle.
D - A dry channel that only supports storm runoff and would be unlikely to support fish during any portions of their life cycle.

[5] Salmonid Habitat – This column indicates if spawning (S) or rearing (R) habitat is present at the crossing site.

[6] Anadromous Fish Access – This column is checked with an "X" if a waterway is accessible to anadromous salmonids or an "R" if only resident fish have access. If anadromous fish have been observed during Dames & Moore surveys or documented as occurring at or above a crossing, it is assumed that access exists. Also, if GIS coverage (WC 1997, WDFW 1998b, and WDFW 1999) indicates the presence of anadromous species at a waterway crossing (unless a barrier was observed during the survey), it is assumed that access exists. If GIS coverage indicates the presence of only resident fish and no anadromous fish have been documented, the waterway is

considered to be accessible to resident fish populations. If no fish are present during surveys or documented and in the professional opinion of the surveying biologist, no suitable fisheries habitat exists, "NF" is entered into the column.

[7] Fish – Indicates if fish were observed during field visits, and if so, what species were observed. Streams and ditches were walked or waded for 100 yards upstream and downstream from each crossing by a fisheries biologist. If it was possible to visually identify a fish by species from these sightings or to capture a fish with a dipnet, the fish are identified by species. Most streams were surveyed once and no adult anadromous fish were present at the time of the surveys. All fish identified during surveys were either juveniles (anadromous or resident) or adult resident fish. This column also indicates if there are no fish present or if there is no available habitat for fish. Streams that contain sea-run coastal cutthroat trout also contain resident populations of coastal cutthroat trout.

- CT – Resident coastal cutthroat trout (Oncorhynchus clarki clarki)
- SCT – Sea-run coastal cutthroat trout (Oncorhynchus clarki clarki)
- CO – Coho salmon (Oncorhynchus kisutch)
- CH – Chum salmon (Oncorhynchus keta)
- FC – Fall/summer-run chinook salmon (Oncorhynchus tshawytscha)
- SPC – Spring-run chinook salmon (Oncorhynchus tshawytscha)
- PS – Pink salmon (Oncorhynchus gorbuscha)
- SS – Sockeye salmon (Oncorhynchus nerka)
- RT – Resident rainbow trout (Oncorhynchus mykiss)
- WST – Winter-run steelhead trout (Oncorhynchus mykiss)
- SST – Summer-run steelhead trout (Oncorhynchus mykiss)
- NC – Native charr (bull trout or Dolly Varden): (Salvelinus confluentus or S. malma)
- EC – Eulachon (Thaleichthys pacificus)
- NS – Northern pikeminnow (Ptychocheilus oregonensis)
- LS – Largescale sucker (Catostomus macrocheilus)
- COT – Sculpins (Cottus sp.)
- LD – Longnose dace (Rhinichthys cataractae)
- SD – Speckled dace (Rhinichthys osculus)
- TS – Three-spine stickleback (Gasterosteus aculeatus)
- MW – Mountain whitefish (Prosopium williamsoni)
- BL – Western brook lamprey (Lampetra richardsoni)
- RL – River lamprey (Lampetra ayresi)
- PL – Pacific Lamprey (Entosphenu tridentatus)
- S – Unidentified salmonid
- NO – No fish were observed
- NF – No habitat is available or no fish are present and the available habitat is not accessible to downstream populations.

[8] Documented fish presence – Species that have been documented in the literature (including databases and GIS mapping) as occurring anywhere in a stream are indicated with the appropriate abbreviation listed above under Fish Presence Survey. If a fish species has been documented (in the literature or during phone interviews with fisheries biologists) specifically at a stream crossing or a tributary above a stream crossing, the abbreviation is in bold. Sources of information are as follows: Ames and Bucknell 1981, Castle 1998, FWS 1998a, FWS 1998b, FWS 1999, Hendrick 1999, Kraemer 1998, Mongillo 1999, WDFW 1992, WDFW 1 995, WDFW 1998a, WDFW 1998b, WDFW 1999, WDF 1993, and Wydoski and Whitney 1979.

Table E-2: Common and Scientific Names of Amphibian, Birds, Fish, and Mammals Mentioned in Section 3.5, Fish and Wildlife

Common Name	Scientific Name
Amphibians	
Pacific treefrog	*Pseudacris regilla*
red-legged frog	*Rana aurora*
western toad	*Bufo boreas*
Birds	
American kestrel	*Falco sparverius*
American robin	*Turdus migratorius*
bald eagle	*Haliaeetus leucocephalus*
belted kingfisher	*Ceryle alcyon*
California quail	*Callipepla californica*
great horned owl	*Bubo virginianus*
marsh wren	*Cistothorus palustris*
northern harrier	*Circus cyaneus*
red-tailed hawk	*Buteo jamaicensis*
red-winged blackbird	*Agelaius phoeniceus*
Fish	
bull trout	*Salvelinus confluentus*
chinook salmon	*Oncorhynchus tshawytscha*
chum salmon	*Oncorhynchus keta*
coast cutthroat trout	*Oncorhynchus clarki clarki*
coho salmon	*Oncorhynchus kisutch*
dace	*Rhinichthys* sp.
Dolly Varden	*Salvelinus malma*
eulachon	*Thaleichthys pacificus*
largescale sucker	*Catostomus macrocheilus*
mountain whitefish	*Prosopium williamsoni*
northern pikeminnow	*Ptychocheilus oregonensis*
Pacific lamprey	*Entosphenus tridentatus*
pink salmon	*Oncorhynchus gorbuscha*

Common Name	Scientific Name
river lamprey	*Lampetra ayresi*
rainbow trout	*Oncorhynchus mykiss*
sculpin	*Cottus* sp.
threespine stickleback	*Gasterosteus aculeatus*
Mammals	
beavers	*Castor canadensis*
black-tailed deer	*Odocoileus hemionus*
mink	*Mustela vison*
muskrat	*Ondatra zibethicus*
opossum	*Didelphis virginiana*
raccoon	*Procyon lotor*
river otter	*Lutra canadensis*
skunks	*Mephitis* spp.